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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 17

Application Number: 09/422,208
Filing Date: October 19, 1999
Appellant(s): COFFIN, JAMES PRICE

John M. Grover
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 16 April 2003.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. The amendment after final rejection filed on 27 August 2002 (certificate of mailing dated 22 August 2002) has been entered.

(5) Summary of Invention

The summary of invention contained in the brief is deficient because it states that "In one disclosed embodiment, the fluorescent coloring is transparent in ambient light, and therefore, the coloring advantageously does not change the original color of the workpiece 202 in ambient light". First it should be noted that ambient is defined[1] as "surrounding" or "encircling". It is important to recognize that the spectral composition of ambient light is unspecified and thus ambient light can include ultraviolet light. However, the specification (including the claims) as filed only disclose a fluorescent colorant which is invisible when not exposed to ultraviolet light (see for example, pg. 2, lines 4-6, pg. 3; lines 23-25; and pg. 4, lines 26-29). Thus the summary of invention should state that in one disclosed embodiment, the fluorescent coloring is transparent in ambient light which does not include ultraviolet

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light, and therefore, the coloring advantageously does not change the original color of the workpiece 202 in ambient light which does not include ultraviolet light.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with because appellant argues that prior art relevant to a mold inspecting device will not necessarily be relevant to a workpiece defect detection device. It should be noted that the proposed second claim group (claims 14 and 21-24) are directed to an injection molded workpiece. However, the claims do not recite limitations wherein the workpiece is inspected separate and independent of the injection mold inspection. Thus, prior art relevant to a mold inspecting device are necessarily relevant to an inspecting device which determines if there is a molding defect (*e.g.*, absence of leftover stock material 204) in the injection molded workpiece 202 (Fig. 2).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

4,236,181	SHIBATA et al.	11-1980
4,632,773	NEEFE	12-1986
5,656,210	HILL et al.	8-1997

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 8-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill *et al.* (US 5,656,210) in view of Neefe (US 4,632,773) and Shibata *et al.* (US 4,236,181). In regard to claims **8**, **10**, **12-15**, **17**, **19-21**, and **23**, Hill *et al.* disclose a workpiece comprised of substantially transparent (column 6, lines 5-18) interpenetrating polymer network (*i.e.*, IPN; column 2, line 34 to column 3, line 12) material fabricated by injection molding (*i.e.*, RIM; column 3, line 31 to column 3, line 12) which includes the steps of injecting molding material into a mold to create the workpiece (column 12, lines 3-9), releasing the mold, and removing the remaining molding material (column 13, lines 60-63). Hill *et al.* also disclose (column 2, line 66 to column 3, line 3) it is known in the art (as exemplified by Neefe US Patent No. 4,632,773) to incorporate a fluorescent colored pigment with the IPN material in order to obtain a contact lens which is luminescent (defined[1] as "capable of, suitable for, or exhibiting luminescence" with luminescence defined[1] as "the emission of light that does not derive energy from the temperature of the emitting body, as in phosphorescence, fluorescence, and bioluminescence") and thus readily identified.

The system and method of Hill *et al.* lacks an inspection device which detects remaining luminescent molding material (*i.e.*, any leftover flowable luminescent material) in at least a portion of the mold by detecting luminance (*i.e.*, a second light of a wavelength visible to humans) excited by ultraviolet light (*i.e.*, a first light of a wavelength not visible to humans). Neefe teaches (column 2, lines 22-27) that luminescence is emitted from luminescent material when excited by ultraviolet light (*i.e.*, by directing ultraviolet light onto the luminescent material). Neefe also teaches (column 1, lines 12-25) it is known in the art to use luminescent compounds in contact lenses for the purpose of determining the location of the contact lenses.

Shibata *et al.* teach (column 2, lines 8-68) it is generally required to use a mold watching device to determine if the molding process is defective (*i.e.*, a part of the molded article remains in the mold). A defective molded article is inherent in a defective molding process since the defective molded article necessarily missing the molded article part which remains in the mold. Shibata *et al.* also teach examining a product with an optical testing device (see Fig. 1; column 1, lines 15-18; column 7, lines 3-8) which is responsive to the luminance (defined[1] as "the condition or quality of being luminous" with luminous defined[1] as "emitting light, especially emitting self-generated light") of the molded article in order to determine if there is incomplete separation of the molded article from the injection mold (column 1, lines 8-18). Thus, Shibata *et al.* teach detecting light emitted from molded articles or molded article portions in order to locate the molded articles or portions thereof so as to determine if there is incomplete separation which results in a defective molded article since part of the defective molded article remains in the mold.

Therefore it would have been obvious to one having ordinary skill in the art to detect luminance (*e.g.*, luminescence excited by ultraviolet light) from the remaining luminescent molding material in the system and method of Hill *et al.*, in order to determine if there is incomplete separation of the molded article from the injection mold (*i.e.*, from the presence or absence of remaining luminescent molding material which is either the luminescent workpiece or portions thereof) and thus also determining if the luminescent workpiece is defective (*i.e.*, missing material due to the incomplete separation).

In regard to claims **9** and **11** (which are dependent on claim 8), claims **16** and **18** (which are dependent on claim 15), and claims **22** and **24** (which are dependent on claim 21), the system and method of Hill *et al.* lacks an explicit description that the fluorescent colorant is substantially transparent. Neefe teach (column 2, lines 58-61) that the fluorescent colorant does not change the color of the material. Therefore it would have been obvious to one having ordinary skill in the art to provide a substantially transparent fluorescent colorant in the system and method of Hill *et al.*, in order that the color of the material be unchanged.

(11) Response to Argument

Response to arguments (8)(ii)(1) on pg. 4-7

In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that appellant admits (second paragraph on pg. 6 of appeal brief filed 16 April 2003) that the Hill *et al.* and Neefe patents disclose molding devices for producing contact lens. Appellant then argues that the Hill *et al.* and Neefe patents explicitly disclose a number of mechanisms for flushing a mold but does not teach or suggest any inspection thereof. However, appellant has failed to provide any evidence within the Hill *et al.* and Neefe patents that teaches away from the use of conventional mold inspection devices. Therefore to one having ordinary skill in the molding art, devices in the molding art (*e.g.*, a conventional mold inspection device) are clearly

relevant to molding devices for producing contact lens to ensure that the contact lens is correctly molded.

Appellant also admits (last paragraph on pg. 6 of appeal brief filed 16 April 2003) that the Shibata *et al.* patent discloses a "conventional mold inspection device" which requires luminance of the article using ambient light. Appellant then argues that there is no suggestion to combine the references since the "conventional mold inspection device" of Shibata *et al.* is completely unrelated to the tagged (*i.e.*, luminescent) contact lens of Hill *et al.* and Neefe. Examiner respectfully disagrees. As discussed above, conventional mold inspection devices are clearly relevant to devices for molding contact lens. In addition, it is important to recognize that a contact lens which is luminescent can provide a plurality of functions such as: (a) "tagging" for identification purposes; and (b) locating purposes. That is, visual observation of the luminescence from the substantially transparent luminescent contact lens allows both location and identification of the substantially transparent luminescent contact lens. Also as discussed above, appellant has failed to provide any evidence within Hill *et al.* and Neefe which teach or suggest that inspection of a molded luminescent contact lens is not required. Thus, the "conventional mold inspection device" of Shibata *et al.* is clearly relevant to molding the luminescent contact lens of Hill *et al.* and Neefe.

Appellant further argues that Shibata *et al.* teach away from combining or modifying the teachings of the cited prior art since "mold recoloring" is disclosed for the "conventional mold inspection device" of Shibata *et al.* which requires luminance of the article using ambient light and cites column 4, lines 18-25 as support. Examiner respectfully disagrees. As discussed above, Neefe teaches that light is emitted from luminescent

material when excited by ultraviolet light and Shibata *et al.* teach detecting the light emitted from molded articles or molded article portions in order to locate the molded articles or portions thereof.

Shibata *et al.* also state (column 4, lines 10-27) that "When the difference between luminance of the image of the plastic material and that of the material of the mold is too small, it is desirable to process the surface of the cavity or the core to enlarge the difference. Further, plastic material is generally colored in various colors such as red, green and blue, and the surface of the mold is ordinarily gray. Accordingly, the difference between luminances of the images of the plastic material and the mold can be enlarged by providing a color filter between the mold and the image forming means. The color filter may be either one which selectively cuts off the spectral range of the color of the plastic material or one which selectively transmits the spectral range of the color. Such a color filter may also be disposed between the image forming medium and the photosensors. When the surface of the mold is processed to have high reflectivity, it is preferred to use a color filter to darken the image of the plastic material". It should be noted that the plastic material luminance has a first spectral range (*i.e.*, first color) and the mold luminance has a second spectral range (*i.e.*, second color). Thus, Shibata *et al.* also teach various techniques to enhance the difference between the first and second colors.

Neefe teaches (column 2, lines 22-27) that the emitted light has a color which can be selected as desired (column 4, lines 5-57). Thus the luminance of the luminescent contact lens has a color and the various techniques of Shibata *et al.* to enhance the difference between the first color of a molded article and the second color of the mold are equally applicable to the first color emitted by the molded luminescent contact lens. Therefore, Shibata *et al.* does not teach away from combining or modifying the teachings of the cited prior art since "mold recoloring" can be used to

enhance the difference between the first color emitted by the molded luminescent contact lens and the second color emitted by the mold.

Further, in response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the teaching, suggestion, or motivation to do so found in the references themselves.

Inspection to determine if part of the molded article remains in the mold is clearly an acceptable, desirable, and known motivation for combining or modifying the teachings of the cited prior art. For example, Shibata *et al.* teach it is generally required to use a mold watching device to determine if a part of the molded article remains in the mold. Thus it clearly follows that a mold watching device should be used when injection molding a luminescent contact lens, in order to determine if a part of the luminescent contact lens remains in the mold. Therefore, an artisan molding the luminescent contact lens of Hill *et al.* and Neefe and also having "no knowledge of the claim invention" would be motivated to add an inspection device in order to detect harmful leftover luminescent materials in the mold as taught by the teachings of the prior art.

Response to arguments (8)(ii)(2) on pg. 7-8

Appellant argues that the Hill *et al.* and Neefe patents disclose "tagging" but does not teach or suggest any mold inspection. Examiner respectfully disagrees since

molding a contact lens would certainly suggest a mold inspection device to ensure that the contact lens is being molded correctly (see discussion above). Further, in response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to appellant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which appellant relies (*i.e.*, "unnatural" light source) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is noted that appellant argues that the Shibata *et al.* patent fails to teach or suggest the use of an "unnatural" light source or any light source and must rely on "ambient light". Examiner respectfully disagrees. First, appellant has failed to explain what constitutes an "unnatural" light source. It should also be noted that a light source is inherent in ambient light since the ambient light must necessarily be supplied by a light source. In addition, Shibata *et al.* state (column 10, lines 10-12) that " ... the light does not uniformly impinge upon the entire area of the movable half". Thus it is clear that Shibata *et al.* teach to impinge "light" (inherently supplied by a light source) upon the mold.

As discussed above, Neefe teaches that light is emitted from luminescent material when excited by ultraviolet light and Shibata *et al.* teach detecting the light emitted from molded articles or molded article portions in order to locate the molded articles or portions thereof. It is important to recognize that the "ambient light" of

Shibata *et al.* has an unspecified spectral composition and appellant has not provided any arguments supported by evidence that the "ambient light" cannot include ultraviolet light. That is, there nothing within the cited references that teaches away from "ambient light" comprising ultraviolet light. On the contrary, the prior art teaches that light (having a color which can be selected as desired) is emitted from a molded luminescent contact lens when excited by ultraviolet light (see for example, column 2, lines 22-27 and column 4, lines 5-57 of Neefe). Therefore the proper and obvious combination of the cited references teach or suggest all the recited limitations including impinging ultraviolet light into at least a portion of the mold to cause emissions from fluorescent colorant in any remaining materials leftover in the mold.

Response to arguments (8)(iii)(1) on pg. 8-10

Appellant admits (third paragraph on pg. 9 of appeal brief filed 16 April 2003) that the Shibata *et al.* patent discloses a defect detecting device (*i.e.*, the "conventional mold inspection device"). Appellant then argues that the Hill *et al.* and Neefe patents does not teach or suggest any inspection thereof and that there is no suggestion to combine the references since the "conventional inspection device" of Shibata *et al.* is completely unrelated to the tagged (*i.e.*, luminescent) contact lens of Hill *et al.* and Neefe. Since the arguments are substantially similar to the arguments (8)(ii)(1), Examiner respectfully disagrees for the reasons discussed above. Therefore, an artisan molding the luminescent contact lens of Hill *et al.* and Neefe and also having "no knowledge of the claim invention" would be motivated to add an inspection device in order to detect leftover luminescent materials in the mold thus also indicating that luminescent contact lens is defective as taught by the teachings of the prior art.

Response to arguments (8)(iii)(2) on pg. 10-11

The arguments presented are substantially similar to the (8)(ii)(2) arguments. These arguments are not persuasive. For the reasons discussed above, the proper and obvious combination of the cited references teach or suggest all the recited limitations including impinging ultraviolet light into at least a portion of the mold to cause emissions from fluorescent colorant in any remaining materials leftover in the mold.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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July 8, 2003

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